**UNITED STATES DISTRICT COURT**
**FOR THE DISTRICT OF MASSACHUSETTS**

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| iROBOT CORPORATION,<br><br>Plaintiff<br><br>v.<br><br>SHENZHEN ZHIYI TECHNOLOGY CO., LTD. D/B/A iLIFE,<br><br>Defendant. | Civil Action No. 1:17-cv-10652<br><br>**JURY TRIAL DEMANDED** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff iRobot Corporation ("iRobot"), by and through its attorneys, brings this complaint for patent infringement and demand for jury trial against Shenzhen ZhiYi Technology Co., Ltd. *d/b/a* iLife ("iLife" or "Defendant") and alleges as follows:

## NATURE OF THE ACTION

1. This action for patent infringement arises under the laws of the United States, Title 35 of the United States Code, 35 U.S.C. § 1 *et seq.*

## PARTIES

2. Plaintiff iRobot Corporation is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 8 Crosby Drive, Bedford, Massachusetts 01730.

3. On information and belief, Defendant Shenzhen ZhiYi Technology Co., Ltd. *d/b/a* iLife iLife is a Chinese corporation, having a principal place of business located at 3rd Floor Bld B, Hytera Technology Park, No. 3,4th of Baolong Road, Longgang, ShenZhen 518000, People's Republic of China. On information and belief, Shenzhen ZhiYi Technology Co., Ltd. conducts

business under the name iLife and utilizes the website www.iliferobot.com for sales in the United States.

## JURISDICTION AND VENUE

4. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. This Court has personal jurisdiction over iLife because, *inter alia*, upon information and belief, iLife has purposedfully availed itself of the privileges of conducting business in this judicial district and has regularly and systematically transacted business in this district, directly or through intermediaries; iLife has committed acts of patent infringement in this district; and iLife has substantial and continuous contacts within this judicial district, at least due to soliciting customers from this judicial district via its own website, www.iliferobot.com, as well as through third-party websites. Moreover, upon information and belief, iLife, and/or others on its behalf, has purposefully shipped its products into this district through established distribution channels and has placed its products into the stream of commerce with the knowledge and expectation that they will be purchased by consumers in this district. Further, on information and belief, iLife both manufactures and imports its infringing devices that are marketed and sold to Massachusetts consumers through a nationwide channel of distribution in the United States.

6. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b).

## THE PATENTS-IN-SUIT

### The ’308 Patent

7. On December 26, 2006, United States Patent No. 7,155,308 (“the ’308 Patent”), entitled “Robot Obstacle Detection System,” was duly and legally issued by the United States

Patent and Trademark Office from U.S. Patent Application Serial No. 10/453,202, filed on June 3, 2003. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '308 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

8. The '308 Patent relates to a robot obstacle detection system that includes a robot housing that navigates with respect to a surface, and a sensor subsystem. The sensor subsystem includes an optical emitter which emits a directed beam having a defined field of emission and a photon detector having a defined field of view which intersects the field of emission of the emitter at a region. A circuit in communication with a detector redirects the robot when the surface does not occupy the region to avoid obstacles. A similar system is employed to detect walls.

**The '233 Patent**

9. On May 26, 2015, United States Patent No. 9,038,233 ("the '233 Patent"), entitled "Autonomous Floor-Cleaning Robot," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 13/714,546, filed on December 14, 2012. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '233 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

10. The '233 Patent relates to an autonomous floor-cleaning robot that includes a cleaning head subsystem with a dual-stage brush assembly having counter-rotating, asymmetric brushes. The autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the cleaning head subsystem.

**The ’090 Patent**

11. On July 2, 2013, United States Patent No.8,474,090 (“the ’090 Patent”), entitled “Autonomous Floor-Cleaning Robot,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 12/201,554, filed on August 29, 2008. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’090 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

12. The ’090 Patent relates to a floor cleaning robot that includes a housing, wheels, and a motor driving the wheels to move the robot across a floor, a control module disposed within the housing and directing movement of the robot across the floor, a sensor for detecting and communicating obstacle information to the control module so that the control module can cause the robot to react to the obstacle, a removable bin disposed at least partially within the housing and receiving particulates, a first rotating member directing particulates toward the bin, and a second rotating member cooperating with the first rotating member to direct particulates toward the bin.

**The ’553 Patent**

13. On December 3, 2013, United States Patent No. 8,600,553 (“the ’553 Patent”), entitled “Coverage Robot Mobility,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 11/758,289, filed on June 5, 2007. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’553 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

14. The ’553 Patent relates to an autonomous coverage robot that includes a drive system, a bump sensor, and a proximity sensor. The drive system is configured to maneuver the

robot according to a heading and a speed setting. The bump sensor is responsive to a collision of the robot with an obstacle in a forward direction. A method of navigating an autonomous coverage robot with respect to an object on a floor includes the robot autonomously traversing the floor in a cleaning mode at a full cleaning speed. Upon sensing a proximity of the object forward of the robot, the robot reduces the cleaning speed to a reduced cleaning speed while continuing towards the object until the robot detects a contact with the object. Upon sensing contact with the object, the robot turns with respect to the object and cleans next to the object.

**The '490 Patent**

15. On October 26, 2004, United States Patent No. 6,809,490 ("the '490 Patent"), entitled "Method and System for Multi-Mode Coverage for an Autonomous Robot," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 10/167,851, filed on June 12, 2002. iRobot is the owner, by valid assignment, of the entire right, title, and interest in and to the '490 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

16. The '490 Patent relates to a control system for a mobile robot to effectively cover a given area by operating in a plurality of modes. In an exemplary embodiment, an autonomous mobile robot can operate in an obstacle following mode, a random bounce mode, or in a spot coverage mode. Additionally, the '490 Patent describes a behavior based architecture for the control system to ensure full coverage.

**The '924 Patent**

17. On November 8, 2016, United States Patent No. 9,486,924 ("the '924 Patent"), entitled "Remote Control Scheduler and Method for Autonomous Robotic Device," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application

Serial No. 14/670,572, filed on March 27, 2015. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '924 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

18. The '924 Patent relates to a method of scheduling a robotic device that enables the device to run autonomously based on previously loaded scheduling information. The method consists of a communication device, such as a hand-held remote device, that can directly control the robotic device, or load scheduling information into the robotic device such that it will carry out a defined task at the desired time without the need for further external control. The communication device can also be configured to load a scheduling application program into an existing robotic device, such that the robotic device can receive and implement scheduling information from a user.

## BACKGROUND

19. iRobot (formerly IS Robotics, Inc.) was founded in 1990 by Massachusetts Institute of Technology roboticists with the vision of making practical robots a reality. The company has developed some of the world's most important robots, and has a rich history steeped in innovation.

20. iRobot is the leader in home robotic cleaning devices, with products delivering convenient, customized, powerful cleaning assistance. Among other product offerings, iRobot develops, manufactures, and sells the well-known Roomba® line of products, which have been recognized as a market leader in robotic vacuum cleaning as well as highly preferred Braava® branded products.

21. iRobot has extensive involvement in the U.S. market, including the Massachusetts market, with its innovative robotic vacuum cleaning devices. iRobot employs hundreds of persons in the United States who are dedicated to the design, research, development, testing, quality

control, and customer care of its robotic vacuum cleaning devices, and related accessories for U.S. customers.

22. Defendant iLife competes directly with iRobot.

23. On information and belief, iLife manufactures and sells robotic vacuum cleaning devices, including, but not limited to, iLife's A-series and V-series robotic vacuums, which include at least the A6, A4, A4s, V7, V7s, V5s, V5s Pro, V3s, and V3s Pro robotic vacuum models,[1] which, as explained below, infringe one or more claims of each of iRobot's '308 Patent, '233 Patent, '090 Patent, '553 Patent,'490 Patent, and '924 Patent (the "Asserted Patents").

24. To the extent facts learned in discovery show that iLife's infringement of a claim of an Asserted Patent is or has been willful, including following the filing of this Complaint, iRobot reserves the right to request such a finding at the time of trial, or as may otherwise be allowed by the Court.

**COUNT I: INFRINGEMENT OF THE '308 PATENT BY iLIFE**

25. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 24 of this Complaint as though fully set forth herein.

26. Upon information and belief, iLife has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '308 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

27. For example, on information and belief, iLife's V5s robotic vacuum, used by iLife, imported, and/or sold and offered for sale by iLife, including at its website, infringes claim 1 of the '308 Patent; this claim recites:

[1] These exemplary infringing products are hereinafter referred to as the "Accused Products."

> A sensor subsystem for an autonomous robot which rides on a surface, the sensor subsystem comprising: an optical emitter which emits a directed optical beam having a defined field of emission; a photon detector having a defined field of view which intersects the field of emission of the emitter at a region; and a circuit in communication with the detector providing an output when an object is not present in the region thereby re-directing the autonomous robot.

28. On information and belief, iLife's V5s robotic vacuum is an autonomous robot that rides on a surface such as a floor.[2] It includes sensor subsystems that comprise at least an optical emitter that emits an optical beam with a defined field of emission and a photon detector whose field of view intersects with this field of emission. On information and belief, the sensor subsystem also includes a circuit in communication with the detector that provides a signal when an object (such as the floor) is not present in this region of intersection such that the robot is re-directed. This behavior is referred to on the iLife website's product page for the V5s robotic vacuum, which indicates that the V5s has "Anti dropping off" functionality and "[c]liff detect sensors … to avoid stairs and other dangerous drop-offs";[3] in the V5s user manual which refers to a "[c]liff sensor";[4] and in the V5s product FAQ, which states that "[t]he robot is constructed of an infrared detector, so it can automatically bypass obstacles" and refers to "signal reflection,"[5] which emitted signal, upon information and belief, is received by a photon detector.

29. Furthermore, upon information and belief, iLife has induced and continues to induce infringement of at least claim 1 of the '308 Patent pursuant to 35 U.S.C. § 271(b), by

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[2] *See, e.g.*, iLife V5s Product Page, "iLife V5s 2 in 1 cleaning video" http://www.iliferobot.com/list-44.html, redirecting to https://youtu.be/AyvYcNY3gz0 (last visited April 12, 2017). Hereinafter, the "V5s Cleaning Video."
[3] iLife V5s Product Page, http://www.iliferobot.com/list-44.html (last visited April 12, 2017). Hereinafter, the "V5s Product Web Page."
[4] iLife V5s and V5s Pro User Manual, http://www.iliferobot.com/weboms/Template/pc_web/statics/down/V5s%20&%20V5%20Pro%20User%20Manual.pdf (last visited April 12, 2017). Hereinafter the "V5s User Manual."
[5] User Instructions and Troubleshooting (V5s), http://www.iliferobot.com/weboms/Template/pc_web/statics/down/V5s%20&%20V5%20Pro.pdf (last visited April 12, 2017). Hereinafter, the "V5s FAQ."

actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the V5s.

30. Upon information and belief, iLife's customers and/or end users have directly infringed and are directly infringing claim 1 of the '308 Patent. iLife has actual knowledge of the '308 Patent at least as of service of this Complaint. iLife is knowingly inducing its customers and/or end users to directly infringe the '308 Patent through, for example, their use of the V5s, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. iLife's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '308 Patent.[6]

31. Upon information and belief, iLife has committed the foregoing infringing activities without license from iRobot.

32. As a result of iLife's infringement of the '308 Patent iRobot has suffered and will continue to suffer damage.

33. iLife's continued infringement of iRobot's patent rights under the '308 Patent will irreparably harm iRobot.

34. The acts of infringement by iLife will continue unless enjoined by this Court.

**COUNT II: INFRINGEMENT OF THE '233 PATENT BY iLIFE**

35. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 34 of this Complaint as though fully set forth herein.

[6] *See, e.g.*, V5s Product Web Page and linked resources, including the V5s User Manual and the V5s FAQ.

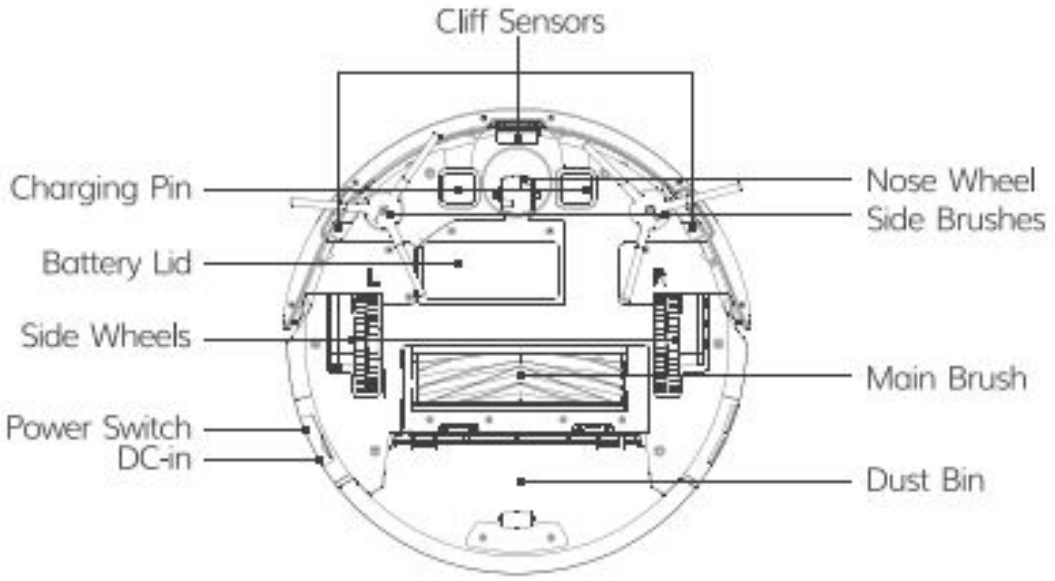
36. Upon information and belief, iLife has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the ’233 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

37. For example, on information and belief, iLife’s A6 robotic vacuum, used by iLife, imported, and/or sold and offered for sale by iLife, including at its website, infringes claim 1 of the ’233 Patent; this claim recites:

> A self-propelled floor-cleaning robot comprising a housing defining a housing perimeter; a powered primary brush assembly disposed within the housing perimeter and positioned to engage a floor surface, the primary brush assembly being configured to rotate about an axis generally parallel to the floor surface; a cliff detector carried by the housing and configured to direct a beam toward the floor surface and to respond to a falling edge of the floor surface; and a powered side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter, the side brush being configured to rotate about an axis generally perpendicular to the floor surface and to rotate in a direction to direct debris toward the robot along a projected direction of movement of the powered primary brush assembly, the side brush having bundles of bristles and being positioned such that the bundles of bristles pass between the cliff detector and the floor surface during a rotation of the side brush around the axis, the bundles of bristles being separated by a gap, the gap being configured to prevent occlusion of the cliff detector beam during at least part of the rotation of the side brush around the axis; a particulate receptacle positioned to receive and collect particulates brushed from the floor surface by the primary brush assembly and the powered side brush; an obstacle detector responsive to obstacles encountered by the robot; and a control circuit in electrical communication with a motor drive and configured to control the motor drive to maneuver the robot about detected obstacles across the floor surface during a floor-cleaning operation.

38. On information and belief, the iLife A6 robotic vacuum is a self-propelled floor-cleaning robot comprising a housing which defines a housing perimeter. On information and belief, it includes a powered primary brush assembly within this housing in a position such that it engages a floor surface, and the brush is configured to rotate about an axis that is generally parallel to the floor. On information and belief, it also includes a cliff detector which emits a beam toward the floor surface in order to respond to a falling edge of the floor surface. On information and

belief, it also includes a side brush which extends beyond the housing perimeter, which rotates about an axis generally perpendicular to the floor surface to direct debris toward the robot along a projected direction of movement of the powered primary brush assembly. On information and belief, the aforementioned primary brush, cliff detector, and side brush are all visible in the image of an iLife A6 robotic vacuum below.[7] The iLife A6 product page also touts its "Smart Detection" feature: "Thanks to the advanced cliff detect sensors, A6 is able to avoid stairs and other dangerous falling-offs."[8]

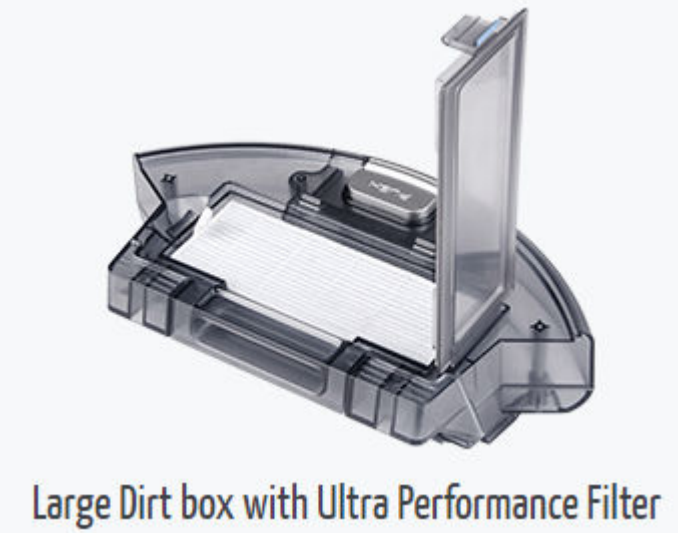



39. As can be seen in the image above,[9] the side brush has bundles of bristles. On information and belief, these bundles of bristles are positioned such that the bundles pass between

[7] *See* iLife A6 Product Page, http://www.iliferobot.com/list-53.html (last visited April 12, 2017). Hereinafter, the "A6 Product Web Page."
[8] *Id.*; *see also* iLife A6 Product Page, "iLife A6 Robot vacuum cleaner home cleaning new level video" http://www.iliferobot.com/list-53.html, redirecting to https://youtu.be/EaGEFSxJIzo (last visited April 12, 2017). Hereinafter, the "A6 Cleaning Video."
[9] iLife A6 User Manual, http://www.iliferobot.com/weboms/Template/pc_web/statics/down/A6%20User%20Manual.pdf (last visited April 12, 2017). Hereinafter the "A6 User Manual."

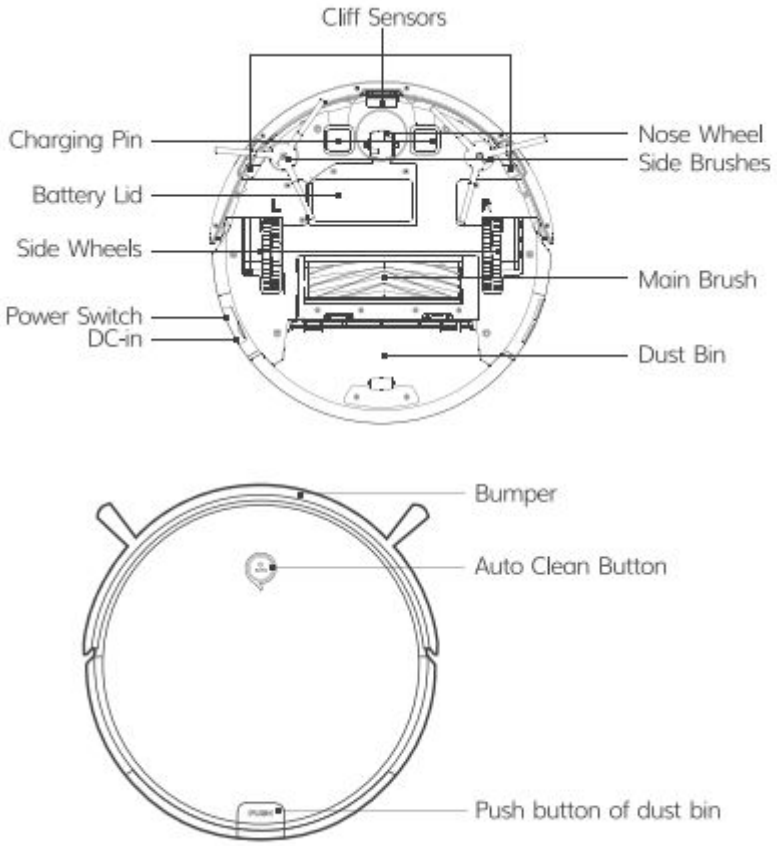
the cliff detector and floor surface during rotation, and the bundles are separated by a gap configured to prevent occlusion of the cliff detector beam.

40. On information and belief, the iLife A6 also includes a particulate receptacle that is positioned to receive the particulates brushed from the floor surface by the aforementioned brushes, as shown in the following image from the A6 Product Web Page, which discusses the A6's "Large Dirt box."[10]




41. On information and belief, the iLife A6 also includes an obstacle detector which is responsive to obstacles encountered, and a control circuit in electrical communication with a motor drive configured to maneuver the robot about detected obstacles during a floor-cleaning operation.[11] The receptacle (referred to as a "Dust Bin") and obstacle detector (in this example, a "Bumper") are both visible in the images from the iLife A6 User Manual below.[12] Additionally, the iLife A6 Product Web Page explains that "[t]hanks to a full suite of sensors, A6 works smartly around obstacles and under furniture to prevent from stucking *[sic]* inside."

[10] *See also* iLife A6 User Manual.
[11] *See, e.g.*, iLife A6 Cleaning Video.
[12] *Id.*




42. Upon information and belief, iLife has induced and continues to induce infringement of at least claim 1 of the ’233 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States, the Accused Products, such as the iLife A6.

43. Upon information and belief, iLife’s customers and/or end users have directly infringed and are directly infringing claim 1 of the ’233 Patent. iLife has actual knowledge of the ’233 Patent at least as of service of this Complaint. iLife is knowingly inducing its customers and/or end users to directly infringe the ’233 Patent through, for example, their use of the iLife A6, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. iLife’s inducement includes, for example, providing technical

guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the ’233 Patent.[13]

44. Upon information and belief, iLife has committed the foregoing infringing activities without license from iRobot.

45. As a result of iLife’s infringement of the ’233 Patent iRobot has suffered and will continue to suffer damage.

46. iLife’s continued infringement of iRobot’s patent rights under the ’233 Patent will irreparably harm iRobot.

47. The acts of infringement by iLife will continue unless enjoined by this Court.

**COUNT III: INFRINGEMENT OF THE ’090 PATENT BY iLIFE**

48. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 47 of this Complaint as though fully set forth herein.

49. Upon information and belief, iLife has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the ’090 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

50. For example, on information and belief, iLife’s A6 robotic vacuum, used by iLife, imported, and/or sold and offered for sale by iLife at its website, infringes claim 1 of the ’090 Patent; this claim recites:

> A floor cleaning robot comprising: a housing and a chassis; wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, each of the wheels being attached to the chassis via a respective arm having a distal end and a proximal end; a control module disposed within the housing and directing movement of the floor cleaning robot across the floor; at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control

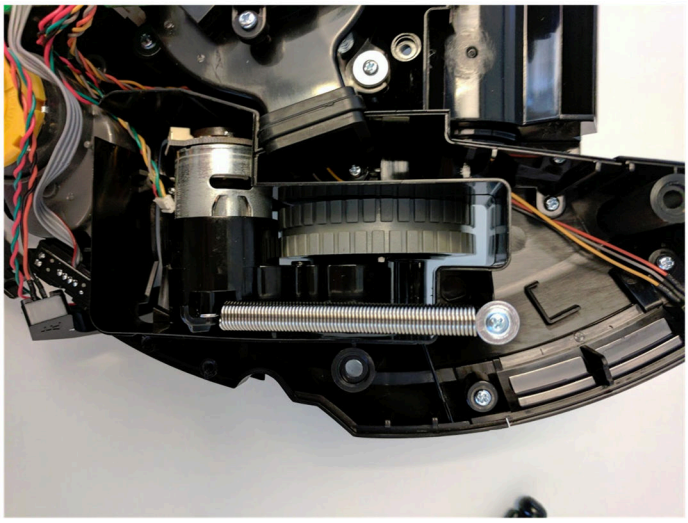
[13] *See, e.g.*, iLife A6 Product Web Page and linked resources, including the A6 User Manual.

> module can cause the floor cleaning robot to react to the obstacle; a removable bin disposed at least partially within the housing and configured to receive particulates; and a first rotating member configured to direct particulates toward the bin, wherein one of the wheels is rotatably attached to the distal end of each arm, and the proximal end of each arm is pivotably attached to the chassis, wherein each wheel is biased to an extended position away from the robot chassis by a spring extending between the arm and the robot chassis, and wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the spring biasing the wheels to an extended position.

51. On information and belief, iLife's A6 robotic vacuum is a floor cleaning robot that comprises a housing, chassis, and wheels with at least one motor, disposed at least partially within the housing, to drive the wheels to move the Accused Products across a floor. The motorized driving of the wheels can be seen, *e.g.*, in the iLife A6 Cleaning Video. The housing and chassis are visible in the following images from the A6 Product Web Page.

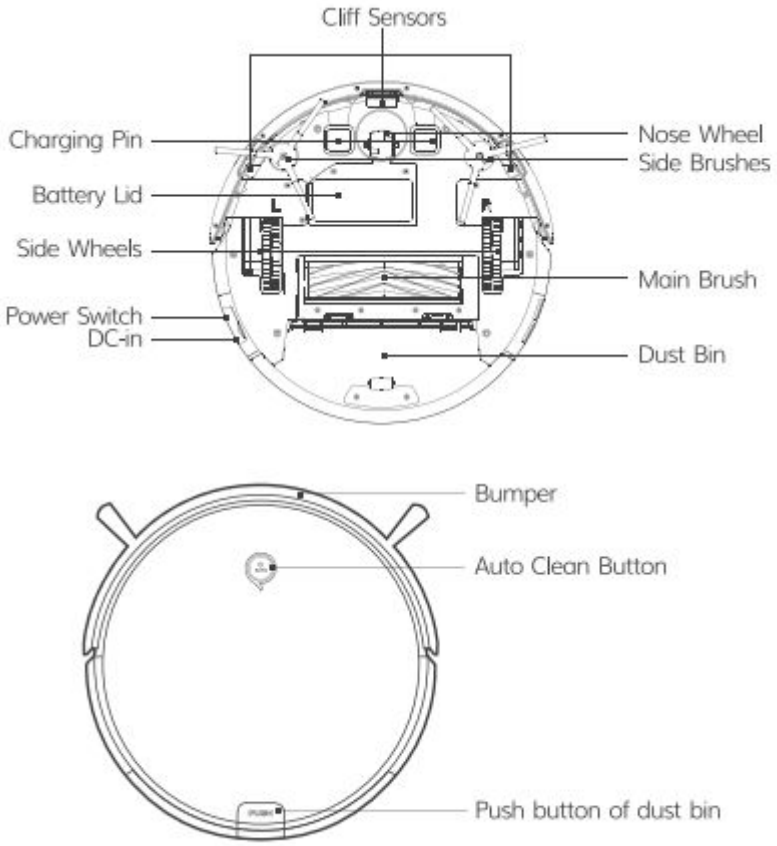

52. On information and belief, each of the aforementioned wheels is attached to the chassis via an arm with distal and proximal ends. On information and belief, the wheels are rotatably attached to the distal end of each arm, the proximal end of each arm is pivotably attached to the chassis, and the wheels are biased to an extended position away from the robot by a spring extending between the arm and the robot chassis. On information and belief, during cleaning, the

weight of the iLife A6 overcomes this biasing force from the spring. The recited wheel arrangement and the biasing action from the spring is visible, *e.g.*, from the image below[14] as well as the iLife A6 Cleaning Video.



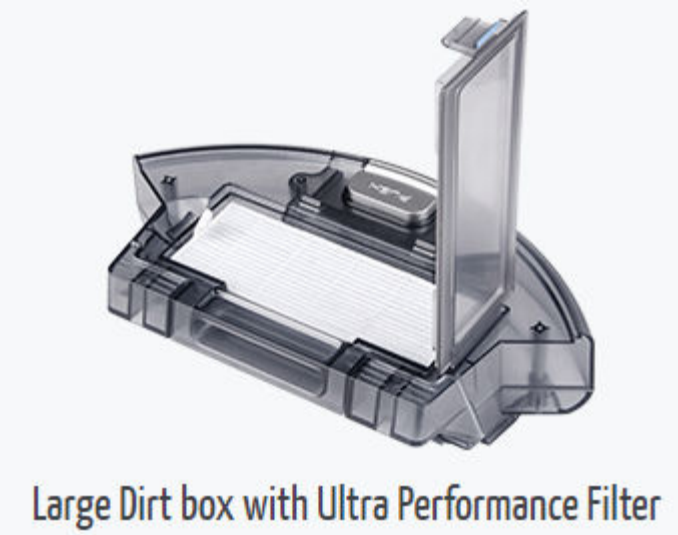
53. On information and belief, the iLife A6 also comprises a control module disposed within the housing which directs movement of the robot.[15] On information and belief, it also comprises at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the Accused Product to react, visible in the images from the iLife A6 user manual below.[16] Additionally, for example, the iLife A6 Product Web Page explains that "[t]hanks to a full suite of sensors, A6 works smartly around obstacles and under furniture to prevent from stucking *[sic]* inside."

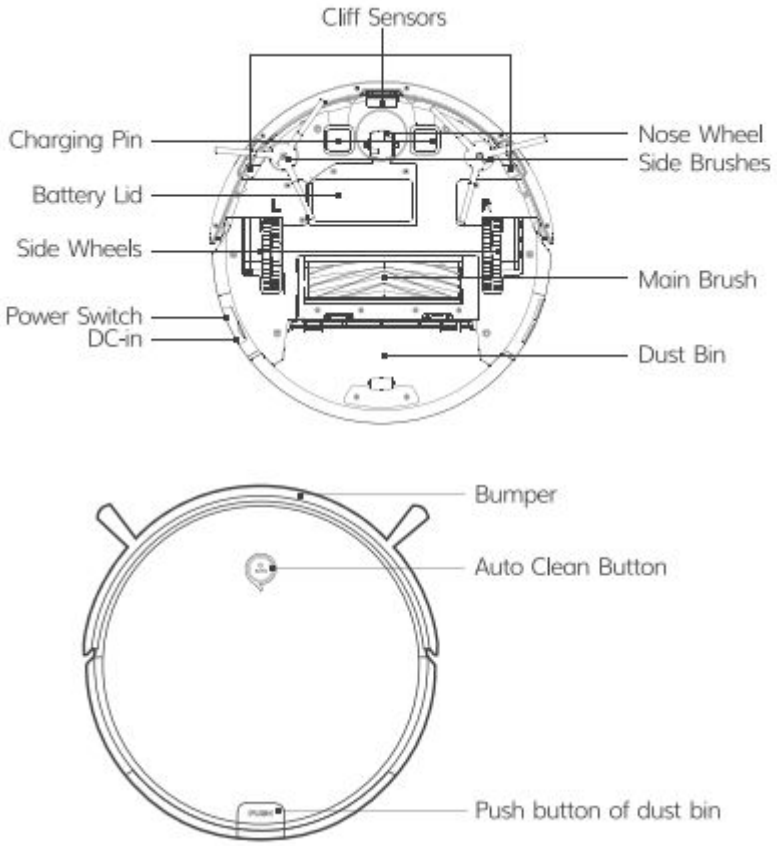
[14] Photograph of disassembled iLife A6.
[15] *See, e.g.*, iLife A6 Cleaning Video.
[16] iLife A6 User Manual.




54. On information and belief, the iLife A6 also comprises a removable bin disposed at least partially within the housing and configured to receive particles, and a rotating member configured to direct particulates toward the bin, as shown in the following image from the A6 Product Web Page, which discusses the A6's "Large Dirt box," and in the images from the iLife A6 user manual below.[17]

[17] iLife A6 User Manual.




55. Upon information and belief, iLife has induced and continues to induce infringement of at least claim 1 of the ’090 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its

customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the iLife A6.

56. Upon information and belief, iLife's customers and/or end users have directly infringed and are directly infringing claim 1 of the '090 Patent. iLife has actual knowledge of the '090 Patent at least as of service of this Complaint. iLife is knowingly inducing its customers and/or end users to directly infringe the '090 Patent through, for example, their use of the iLife A6, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. iLife's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '090 Patent.[18]

57. Upon information and belief, iLife has committed the foregoing infringing activities without license from iRobot.

58. As a result of iLife's infringement of the '090 Patent iRobot has suffered and will continue to suffer damage.

59. iLife's continued infringement of iRobot's patent rights under the '090 Patent will irreparably harm iRobot.

60. The acts of infringement by iLife will continue unless enjoined by this Court.

**COUNT IV: INFRINGEMENT OF THE '553 PATENT BY iLIFE**

61. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 60 of this Complaint as though fully set forth herein.

62. Upon information and belief, iLife has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '553 Patent pursuant to 35

[18] *See, e.g.*, iLife A6 Product Page and linked resources, including the A6 User Manual.

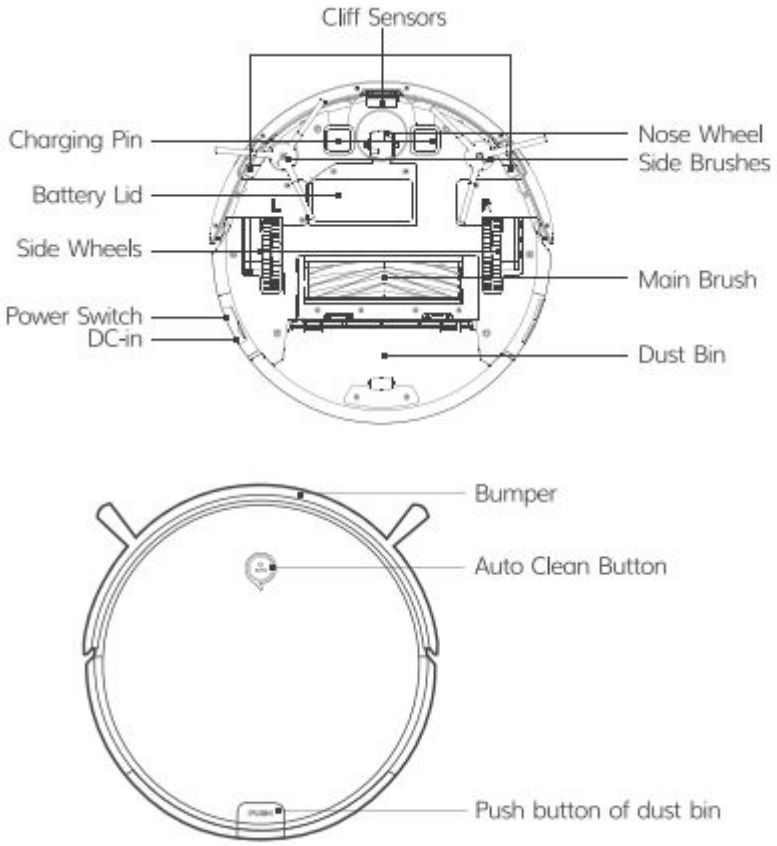
U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

63. For example, on information and belief, iLife's A6 robotic vacuum, used by iLife, imported, and/or sold and offered for sale by iLife, including at its website, infringes claim 1 of the '553 Patent; this claim recites:

> An autonomous coverage robot comprising: a drive system configured to maneuver the robot according to a heading setting and a speed setting; a bump sensor responsive to a collision of the robot with an obstacle in a forward direction; and a proximity sensor responsive to a potential obstacle forward of the robot; wherein the drive system is configured to reduce the speed setting in response to a signal from the proximity sensor indicating detection of a potential obstacle, while continuing to advance the robot according to the heading setting; wherein the drive system is configured to increase the speed setting if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting; and wherein the drive system is configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle.

64. On information and belief, the iLife A6 is an autonomous coverage robot that comprises a drive system configured to maneuver the robot according to a heading setting and a speed setting.[19] On information and belief, it comprises a bump sensor (responsive to a collision of the robot with an obstacle in a forward direction) and a proximity sensor (responsive to a potential obstacle forward of the robot). The bump sensor and drive system are all visible in the image of iLife A6 from the iLife A6 User Manual, below.[20]

[19] *See, e.g.*, iLife A6 Cleaning Video.
[20] Additionally, for example, the iLife A6 Product Web Page explains that "[t]hanks to a full suite of sensors, A6 works smartly around obstacles and under furniture to prevent from stucking *[sic]* inside."




65. On information and belief, the drive system is configured to, *inter alia*, (1) reduce the robot's speed setting in response to an obstacle detection sensor from the proximity sensor while continuing to advance the robot according to the heading setting and (2) increase the robot's speed if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting. On information and belief, the drive system is also configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle.[21] As explained on the iLife A6 Product Web Page explains that "[t]hanks to a full suite of sensors, A6 works smartly around obstacles and under furniture to prevent from stucking *[sic]* inside."

[21] *See, e.g.*, iLife A6 Cleaning Video.

66. Upon information and belief, iLife has induced and continues to induce infringement of at least claim 1 of the ’553 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the iLife A6.

67. Upon information and belief, iLife’s customers and/or end users have directly infringed and are directly infringing claim 1 of the ’553 Patent. iLife has actual knowledge of the ’553 Patent at least as of service of this Complaint. iLife is knowingly inducing its customers and/or end users to directly infringe the ’553 Patent through, for example, their use of the iLife A6, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. iLife’s inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the ’553 Patent.[22]

68. Upon information and belief, iLife has committed the foregoing infringing activities without license from iRobot.

69. As a result of iLife’s infringement of the ’553 Patent iRobot has suffered and will continue to suffer damage.

70. iLife’s continued infringement of iRobot’s patent rights under the ’553 Patent will irreparably harm iRobot.

71. The acts of infringement by iLife will continue unless enjoined by this Court.

[22] *See, e.g.*, iLife A6 Product Web Page and linked resources, including the A6 User Manual.

**COUNT V: INFRINGEMENT OF THE '490 PATENT BY iLIFE**

72. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 71 of this Complaint as though fully set forth herein.

73. Upon information and belief, iLife has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '490 Patent by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, the Accused Products.

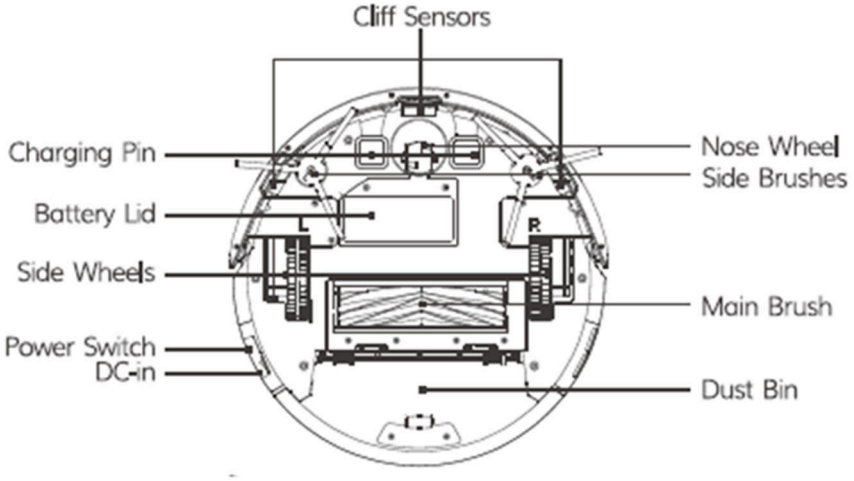
74. For example, on information and belief, iLife's A6 robotic vacuum, used by iLife, imported, and/or sold and offered for sale by iLife at its website, infringes claim 1 of the '490 Patent; this claim recites:

> A mobile robot comprising: (a) means for moving the robot over a surface; (b) an obstacle detection sensor; (c) and a control system operatively connected to said obstacle detection sensor and said means for moving; (d) said control system configured to operate the robot in a plurality of operational modes and to select from among the plurality of modes in real time in response to signals generated by the obstacle detection sensor, said plurality of operational modes comprising: a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle, and wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least twice the work width of the robot.

75. On information and belief, the iLife A6 is a mobile robot that comprises a means for moving the robot over a surface, an obstacle detection sensor, and a control system operatively connected to the obstacle detection sensor and the means for moving.[23] For example, the robot

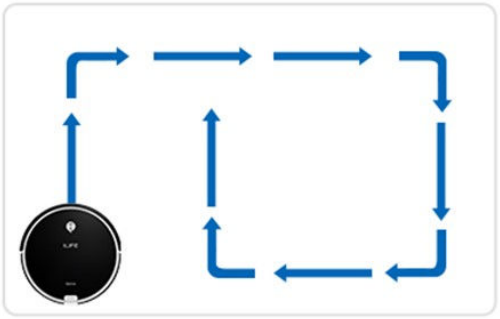
[23] *See, e.g.*, iLife A6 Cleaning Video.

and at least one of the obstacle detection sensors are visible in the image below from the iLife A6 User Manual:[24]



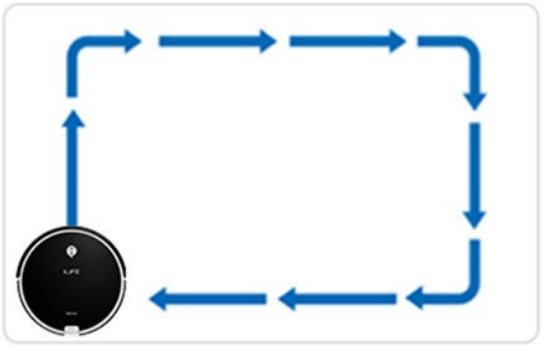

76. On information and belief, the control system is configured to operate the robot in a plurality of modes, selecting among these modes in real time in response to signals generated by the obstacle sensor. On information and belief, these modes include a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle, and wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least twice the work width of the robot. These modes are listed in the iLife A6 Product Web Page:

[24] Additionally, for example, the iLife A6 Product Web Page explains that "[t]hanks to a full suite of sensors, A6 works smartly around obstacles and under furniture to prevent from stucking *[sic]* inside."



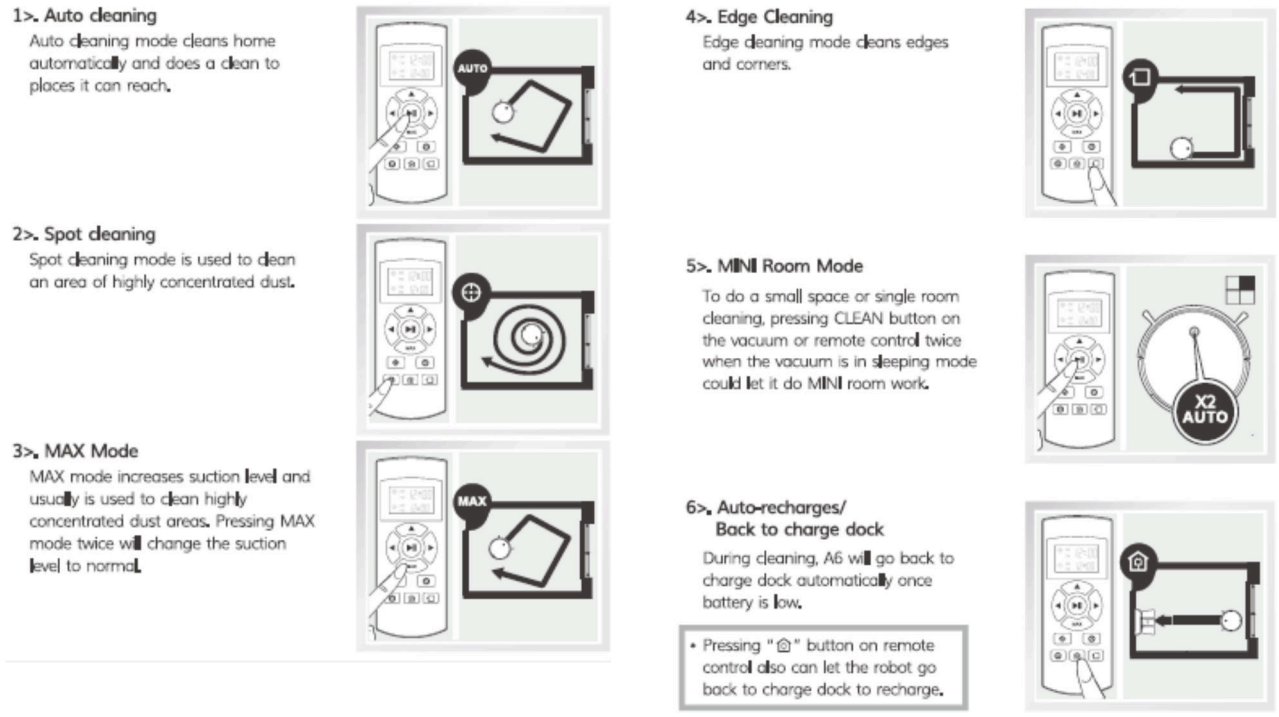
- Auto cleaning mode

- Spot cleaning mode



- Edge cleaning mode

The cleaning modes of the iLife A6, including an auto selection cleaning, are also described in the iLife A6 User Manual:




77. Upon information and belief, iLife has induced and continues to induce infringement of at least claim 1 of the ’490 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the iLife A6.

78. Upon information and belief, iLife’s customers and/or end users have directly infringed and are directly infringing claim 1 of the ’490 Patent. iLife has actual knowledge of the ’490 Patent at least as of service of this Complaint. iLife is knowingly inducing its customers and/or end users to directly infringe the ’490 Patent through, for example, their use of the iLife A6, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. iLife’s inducement includes, for example, providing technical

guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '490 Patent.[25]

79. Upon information and belief, iLife has committed the foregoing infringing activities without license from iRobot.

80. As a result of iLife's infringement of the '490 Patent iRobot has suffered and will continue to suffer damage.

81. iLife's continued infringement of iRobot's patent rights under the '490 Patent will irreparably harm iRobot.

82. The acts of infringement by iLife will continue unless enjoined by this Court.

**COUNT VI: INFRINGEMENT OF THE '924 PATENT BY iLIFE**

83. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 82 of this Complaint as though fully set forth herein.

84. Upon information and belief, iLife has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '924 Patent by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, the Accused Products.

85. For example, on information and belief, iLife's V7 robotic vacuum, used by iLife, imported, and/or sold and offered for sale by iLife at third-party websites, infringes claim 1 of the '924 Patent; this claim recites:

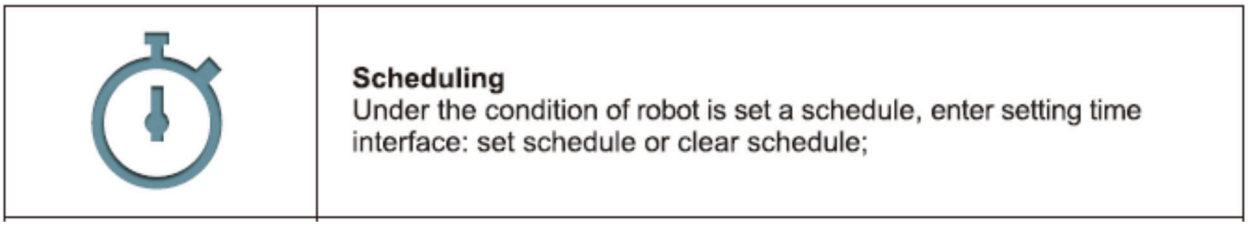
> A method of cleaning a room, the method comprising: transmitting from a cleaning robot to a mobile phone a status of the cleaning robot; and receiving at the cleaning robot from the mobile phone, in response to an operator command input at the mobile phone and at least in part indicative of a schedule, information including instructions configured to cause a processor of the cleaning robot to execute a cleaning operation in the room according to the schedule, wherein executing the

[25] *See, e.g.*, iLife A6 Product Web Page and linked resources, including the iLife A6 User Manual.

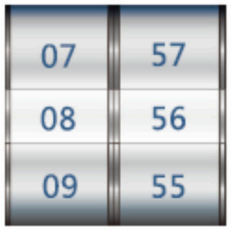
cleaning operation in the room according to the schedule comprises: leaving a stationary charging device at which the cleaning robot is docked according to the schedule, and navigating about a floor surface of the room.

86. Upon information and belief, the iLife V7 provides for a method of cleaning a room that includes transmitting from a cleaning robot to a mobile phone a status of the cleaning robot. For example, in the "App interface operating" section of the V7 User Manual, the "Function setting button" allows the user to "[e]nter setting function interface, check the following information: robot power, schedule, working time, suction size and restore factory settings."[26]

87. Upon information and belief, the iLife A7 can also receive in response to an operator command input at the mobile phone and at least in part indicative of a schedule, information including instructions configured to cause a processor of the cleaning robot to execute a cleaning operation in the room according to the schedule, wherein executing the cleaning operation in the room according to the schedule comprises leaving a stationary charging device at which the cleaning robot is docked according to the schedule, and navigating about a floor surface of the room. For example, the V7 User Manual provides the following instructions for use of the mobile phone app to enter the scheduling mode and set the scheduling window:




[26] *See* V7 User Manual, http://download.appinthestore.com/uploads/201511/Chuwi%20Ilife%20V7%20English%20User%20Manual.pdf (last visited April 12, 2017). Hereinafter the "V7 User Manual." *See also* the V7 User Manual "App installation" section regarding supported mobile phone platforms.

| | |
|---|---|
|  | **Set schedule window**<br>Display the clock time, the robot will start work on the scheduled time. If you do not set a schedule, it will display "00:00". |

88. Upon information and belief, iLife has induced and continues to induce infringement of at least claim 1 of the ’924 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the iLife V7.

89. Upon information and belief, iLife’s customers and/or end users have directly infringed and are directly infringing claim 1 of the ’924 Patent. iLife has actual knowledge of the ’924 Patent at least as of service of this Complaint. iLife is knowingly inducing its customers and/or end users to directly infringe the ’924 Patent through, for example, their use of the iLife V7, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. iLife’s inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the ’924 Patent.[27]

90. Upon information and belief, iLife has committed the foregoing infringing activities without license from iRobot.

91. As a result of iLife’s infringement of the ’924 Patent iRobot has suffered and will continue to suffer damage.

[27] *See, e.g.*, iLife V7 User Manual.

92. iLife's continued infringement of iRobot's patent rights under the '924 Patent will irreparably harm iRobot.

93. The acts of infringement by iLife will continue unless enjoined by this Court.

**PRAYER FOR RELIEF**

WHEREFORE, iRobot prays for judgment in its favor against Defendant, and granting relief as follows:

A. For a judgment declaring that the Defendant has infringed the Asserted Patents;

B. For a grant of an injunction pursuant to 35 U.S.C. § 283, enjoining the Defendant together with its respective officers, directors, agents, servants, employees, and attorneys, and upon those persons in active concert or participation with them from further acts of infringement;

C. For an award to iRobot of compensatory damages as a result of the Defendant's infringement of the Asserted Patents, together with interest and costs, and in no event less than a reasonable royalty;

D. For a judgment declaring that this case is exceptional and awarding iRobot its expenses, costs, and attorneys' fees in accordance with 35 U.S.C. § 285 and Rule 54(d) of the Federal Rules of Civil Procedure;

E. For such other and further relief as the Court deems just and proper.

**DEMAND FOR A JURY TRIAL**

iRobot hereby demands a trial by jury in this action.

Respectfully submitted,

By: */s/ Stephen Marshall*

Stephen A. Marshall (BBO# 666200)
FISH & RICHARDSON P.C.
1425 K Street, NW
Washington, DC 20005
(202) 626-6414
smarshall@fr.com

Andrew G. Pearson (BBO# 688709)
FISH & RICHARDSON P.C.
One Marina Park Drive
Boston, MA 02210
(617) 542-5070
apearson@fr.com

*Counsel for Plaintiff iRobot Corp.*

Dated: April 17, 2017